

REMARKS/ARGUMENTS

Claims 17-28 and 32-35 are pending in the present application. Claims 24 and 26-28 have been cancelled. Claims 17 and 23 have been amended to indicate that the activated carbon composition consists essentially of an activated carbon, a carboxylic acid containing compound, and optionally water. Claim 23 has been further amended to include the limitations of cancelled claim 27. Support for the amendments can be found in the cancelled claims, the examples, and at paragraphs [0015] and [0017] – [0019] of the specification.

Claim Objection

The Examiner objected to claim 24 as being a duplicate of claim 23. Claim 24 has been cancelled, rendering the objection moot.

35 U.S.C. § 102 Rejection

Claims 17, 18, 22-25, 28, and 32-35 stand rejected under 35 U.S.C. § 102(b) as being anticipated by United States Patent No. 4,789,475 to Harte et al. (hereinafter “Harte”).

The present invention, as recited in the amended claims, is directed to a method of removing impurities from an aqueous system. The method includes the steps of providing an activated carbon composition that consists essentially of a carboxylic acid material adsorbed onto the surface of an activated carbon and optionally water, and passing an aqueous stream through the activated carbon composition. The pH of the aqueous stream deviates less than 1 pH unit after passing through the activated carbon composition.

Harte discloses a filter bed material for the removal of heavy metal ions from water. The bed material includes a charcoal bed having a mixture of mercaptan and carboxylate chelating agents adsorbed thereto, utilizing a polymer to aid in the adsorption of the chelating compound.

In order to anticipate a claim, a prior art reference must disclose every limitation of the claim. In the presently amended claims, the transitional phrase “consisting essentially of” requires that the activated carbon composition contain only activated carbon, a carboxylic acid containing compound, optionally water, and incidental amounts of impurities that do not materially affect the invention. The filter bed material disclosed by Harte includes charcoal, mercaptan and carboxylate chelating agents, and a polymer. The presently claimed invention does not include an activated carbon that includes mercaptans or a polymer and, as such, it is not anticipated by Harte because the mercaptans and polymer are a necessary component in the bed material disclosed by Harte.

Since Harte does not anticipate the claims, the rejection of claims 17, 18, 22, 23, 25, and 32-35 under 35 U.S.C. § 102(b) should be withdrawn.

35 U.S.C. § 103 Rejections

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being obvious over Harte in view of United States Patent No. 5,437,845 to Brioni et al. (hereinafter “Brioni”). The Examiner asserts that Brioni discloses that it was known to produce activated charcoal from the claimed materials.

However, Brioni does not provide any disclosure that would teach, suggest or motivate one skilled in the art to not use a polymer or mercaptans in the filter bed material disclosed by Harte. Moreover, claim 19 depends from and adds further limitation to claim 17, which is believed to be patentable for the reasons discussed above. Therefore, the combination of Harte and Brioni does not render claim 19 obvious.

Claims 20, 21, 26, and 27 stand rejected under 35 U.S.C. § 103(a) as being obvious over Harte in view of United States Patent No. 6,436,294 to Lundquist. The Examiner asserts that Lundquist teaches that EDTA, citric acid, and lactic acid are equivalent chelating agents for heavy metals and, therefore, the combination of Harte and Lundquist renders the claim obvious.

Claims 26 and 27 have been cancelled, so the rejection with regard to those claims is moot. Further, claims 20 and 21 depend from claim 17 and the discussion above regarding claim 17 is incorporated herein.

Lundquist discloses a process for modifying a medium that includes treating a medium having a metal ion sorption capacity with a solution that includes an agent capable of forming a complex with metal ions and ions selected from sodium, potassium, magnesium, and combinations thereof, to create a medium having an increased capacity to sorb metal ions relative to the untreated medium.

At column 3, lines 23-27, Lundquist discloses examples of useful complexing agents as including compounds having more than one carboxyl group, such as citric acid, tartaric acid, oxalic acid, succinic acid, malonic acid, and EDTA. The Examiner suggests this language in Lundquist indicates that EDTA and citric acid are equivalent chelating agents; however, this does not appear to be what the disclosure recites. All that the disclosure of Lundquist recites is

that EDTA and citric acid are two compounds containing more than one carboxylic acid group that can be used in their specific invention. There is no disclosure suggesting that citric acid could be adsorbed onto activated carbon and prevent pH excursions as in the present invention, therefore, a *prima facie* case of obviousness has not been established. The Examiner, however, has attempted to supplement the deficiencies in the disclosure of Lundquist with the disclosure of Harte.

Harte is directed toward removing heavy metals, as is Lundquist, and no combination of Harte or Lundquist suggests preventing pH excursions as recited in the present invention. Therefore, there would have been no motivation, teaching, or disclosure in the combination of Harte and Lundquist to combine citric acid with activated charcoal to arrive at the claimed invention. The Examiner has used the claims in the present invention as a template to piece together the prior art, thus, performing a hindsight reconstruction, which does not provide a *prima facie* case of obviousness. As such the rejection of claims 20 and 21 under 35 U.S.C. § 103(a) is improper and should be withdrawn.

Applicants also submit herewith a Declaration Under 37 C.F.R. § 1.132 by co-inventor Mr. Robert G. Roodman, President of Envirotrol, Inc., the assignee of the present application. The Declaration shows the immediate and growing sales of the activated carbon of the present invention as marketed under the trade name NoRise[®] Activated Carbon by Envirotrol. The Declaration also indicates that NoRise[®] is made according to the present invention.

Applicants further submit herewith a Material Safety Data Sheet (MSDS) for various NoRise® Activated Carbon products sold by Envirotrol. The MSDS shows that NoRise® Activated Carbon includes carbon and citric acid, a particular embodiment of the presently claimed invention.

Secondary considerations such as commercial success and long felt but unsolved needs can be utilized as relevant circumstances indicating the nonobviousness of the subject matter sought to be patented. Graham v. John Deere Co., 383 U.S. 1, 17 (1966). Where demonstrated evidence of commercial success and proof that the successful product embodies the claimed invention is provided, it is presumed that such success was at least in significant part due to the claimed invention. Heidelberg Harris, Inc. v. Mitsubishi Heavy Indus., 56 U.S.P.Q.2D 1714, (Fed. Cir. 2000).

Applicants sought to address the long unmet problem in the art where activated carbon, when first put “on-line” in water service, acts as an ion exchange medium on its surface, causing the pH of the outlet water to rise for up to several hundred or thousands of bed volumes (see paragraph [0007] of the specification). Applicants’ presently claimed invention has met that long felt need as evidenced by the immediate and increasing sales of NoRise® Activated Carbon. Therefore, even if the other arguments presented above are not deemed convincing to the Examiner, the fact that Applicants have successfully satisfied a long unmet need in the art, not met by others, as evidenced by the commercial success of NoRise® Activated Carbon, overcomes the rejection under 35 U.S.C. § 103(a) for obviousness.

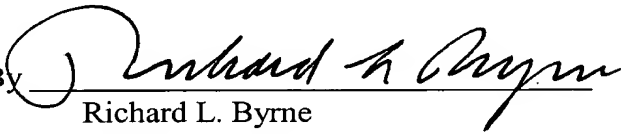
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CONCLUSION

For all of the reasons stated above, the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn and a Notice of Allowability should be issued. Reconsideration of the rejections and allowance of claims 17-23, 25, and 32-35 are respectfully requested.

Respectfully submitted,

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